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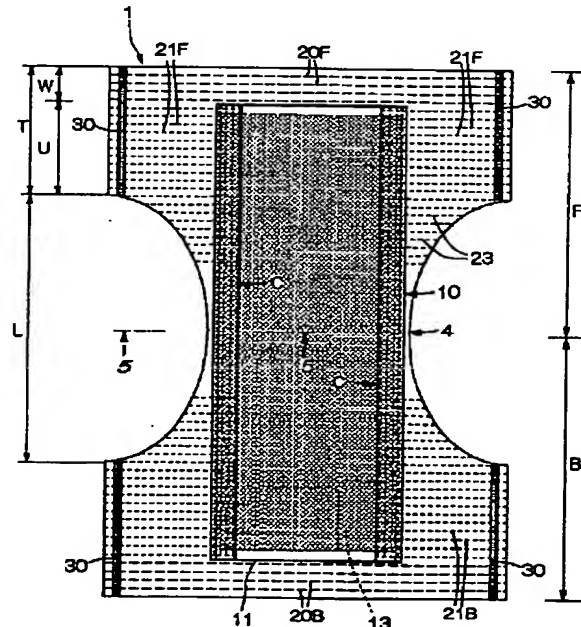
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(54)【発明の名称】 パンツ型使い捨て紙おむつ

(57)【要約】

【課題】パンツ型使い捨て紙おむつにおける製品の見栄え及びフィット性の両者を改善する。

【解決手段】腰下部Uにおける非伸縮部が前身頃および後身頃の少なくとも一方の中央部にあり、腰下部における伸縮部がその非伸縮部を除く左右脇部を含む領域にあり、かつ、前身頃と後身頃とを重ねた状態で、胴回り部が製品幅方向に伸張限界まで伸張しているときの最大製品幅と胴回り部が非伸張の収縮状態にあるときの収縮製品幅との差を、100～250mmとする。



## 【特許請求の範囲】

【請求項1】使用状態においてウエスト開口部及び左右のレッグ開口部が形成され、前記ウエスト開口縁から前記レッグ開口始端に至る長さ範囲の胴周り部の少なくとも腰下部に、周方向に沿いつつ縦方向に7、0mm以下の間隔を有する複数の伸縮部材が配置された伸縮部と伸縮部材が配置されていない非伸縮部とを有するパンツ型使い捨て紙おむつであって、

前記非伸縮部が前身頃および後身頃の少なくとも一方の中央部にあり、前記伸縮部がその非伸縮部を除く左右脇部を含む領域にあり、かつ、前身頃と後身頃とを重ねた状態で、前記胴回り部が製品幅方向に伸張限界まで伸張しているときの最大製品幅と前記胴回り部が非伸張の収縮状態にあるときの収縮製品幅との差が、100～250mmであることを特徴とするパンツ型使い捨て紙おむつ。

【請求項2】使用状態においてウエスト開口部及び左右のレッグ開口部が形成され、前記ウエスト開口縁から前記レッグ開口始端に至る長さ範囲の胴周り部の少なくとも腰下部に、周方向に沿って伸縮部材が配置された伸縮部と伸縮部材が配置されていない非伸縮部とを有するパンツ型使い捨て紙おむつであって、前記非伸縮部が前身頃および後身頃の少なくとも一方の中央部にあり、前記伸縮部がその非伸縮部を除く左右脇部を含む領域にあり、かつ、前身頃と後身頃とを重ねた状態で前記胴回り部を製品幅方向に伸張させたときの胴回り部の製品幅方向の伸縮力が、伸張限界における最大製品幅に対して100mm収縮している状態で300～600gfの範囲にあり、かつ伸張限界における最大製品幅に対して150mm収縮している状態で50～300gfの範囲にあることを特徴とするパンツ型使い捨て紙おむつ。

【請求項3】前記伸張限界状態の伸縮部100mm×100mmにつき、伸縮部材の質量が0.05～0.13gである請求項1または2に記載のパンツ型使い捨て紙おむつ。

【請求項4】前記非伸縮部の周方向の長さの総和が、胴回り周長の15～40%である請求項1～3のいずれか1項に記載のパンツ型使い捨て紙おむつ。

【請求項5】前記伸縮部の縦方向の幅が、50～150mmの範囲にある請求項1～4のいずれか1項に記載のパンツ型使い捨て紙おむつ。

【請求項6】前記伸縮部材の収縮している通常状態の長さに対する最大伸長時の長さの割合が250～350%である請求項1～5のいずれか1項に記載のパンツ型使い捨て紙おむつ。

【請求項7】使用状態においてウエスト開口部及び左右のレッグ開口部が形成され、前記ウエスト開口縁から前記レッグ開口始端に至る長さ範囲の胴周り部の少なくとも腰下部に、周方向に沿いつつ前記胴周り部の60%以

上の長さ範囲にわたる伸縮部材が配置された伸縮部と伸縮部材が配置されていない非伸縮部とを有するパンツ型使い捨て紙おむつであって、

前記伸縮部材は網目状伸縮部材、無孔のフィルム状伸縮部材または孔開きのフィルム状伸縮部材であり、前記非伸縮部が前身頃および後身頃の少なくとも一方の中央部にあり、前記伸縮部がその非伸縮部を除く左右脇部を含む領域にあり、かつ、前身頃と後身頃とを重ねた状態で、前記胴回り部が製品幅方向に伸張限界まで伸張しているときの最大製品幅と前記胴回り部が非伸張の収縮状態にあるときの収縮製品幅との差が、100～250mmであることを特徴とするパンツ型使い捨て紙おむつ。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、パンツ型使い捨て紙おむつ、特に、使用状態においてウエスト開口部及び左右のレッグ開口部が形成され、前記ウエスト開口縁から前記レッグ開口始端に至る長さ範囲の胴周り部の少なくとも腰下部に、周方向に沿って伸縮部材が配置された伸縮部と伸縮部材が配置されていない非伸縮部とを有するパンツ型使い捨て紙おむつに関する。

## 【0002】

【従来の技術】近年、パンツ型使い捨て紙おむつが汎用されている。この場合における伸縮部材は、特に胴周り部については通常は糸ゴムが使用され、この糸ゴムは、胴周り部（ウエスト開口縁からレッグ開口始端に至る長さ範囲の領域）のウエスト開口縁側に偏在させた領域の全周に配置し、配置間隔は10mm以上が一般的である。また、通常は、ウエスト開口部の配置間隔を小さく、腹部の過度の圧迫を防止するために腰下部（ウエスト開口部より股下側の部分）の配置間隔を大きくしてある。しかしこの種の製品の欠点は、体裁の悪い皺が発生することであった。そこで、前記胴周り部に伸縮部材を有さない領域を設けて体裁の悪い皺の発生を防止したパンツ型使い捨て紙おむつが提案されている。

## 【0003】

【発明が解決しようとする課題】この種のパンツ型使い捨て紙おむつは見栄えが非常によく、しかしながら、この種のパンツ型使い捨て紙おむつは、場合によっては使用時にはかせづらかったりまたははきづらかったり、ずれ落ちたりすることがあった。また、所望のフィット感が得られないこともあった。

【0004】そこで、本発明は、それらの諸問題を解決し、見栄えがよくさらに使用時にはかせやすくまたははきやすく、ずれ落ちが生じることなく、フィット感に優れたパンツ型使い捨て紙おむつを提供することにある。

## 【0005】

【課題を解決するための手段】上記課題を解決した本発明に次記のとおりである。

<請求項1記載の発明>使用状態においてウエスト開口部及び左右のレッグ開口部が形成され、前記ウエスト開口縁から前記レッグ開口始端に至る長さ範囲の胴周り部の少なくとも腰下部に、周方向に沿いかつ縦方向に7.0mm以下の間隔を有する複数の伸縮部材が配置された伸縮部と伸縮部材が配置されていない非伸縮部とを有するパンツ型使い捨て紙おむつであって、前記非伸縮部が前身頃および後身頃の少なくとも一方の中央部にあり、前記伸縮部が前記非伸縮部を除く左右脇部を含む領域にあり、かつ、前記伸縮部が収縮している通常状態の製品幅と前記伸縮部を周方向に最大に伸長させた最大伸長状態の製品幅との差が100～250mmであることを特徴とするパンツ型使い捨て紙おむつ。

【0006】(作用効果)製品を見ると、目立つのは中央部(周方向の中央部)であるところ、本発明においては、前記非伸縮部が前身頃および後身頃の少なくとも一方の中央部にあるので、この部分における皺の発生がなく製品の見栄えに優れる。さらに、中央部に存在する吸収体の変形が防止される。しかも、前記伸縮部が前記非伸縮部を除く左右脇部を含む領域にあり、かつ、前記伸縮部が収縮している通常状態の製品幅と前記伸縮部を周方向に最大に伸長させた最大伸長状態の製品幅との差を100～250mmとしたことにより、はきやすくまたははかせやすく、フィット感に優れたものとなる。

【0007】<請求項2記載の発明>使用状態においてウエスト開口部及び左右のレッグ開口部が形成され、前記ウエスト開口縁から前記レッグ開口始端に至る長さ範囲の胴周り部の少なくとも腰下部に、周方向に沿って伸縮部材が配置された伸縮部と伸縮部材が配置されていない非伸縮部とを有するパンツ型使い捨て紙おむつであって、前記非伸縮部が前身頃および後身頃の少なくとも一方の中央部にあり、前記伸縮部が前記非伸縮部を除く左右脇部を含む領域にあり、かつ、前記伸縮部を周方向に最大に伸長させた最大伸長状態から100mm縮ませたときの、製品の胴回り部の伸縮力が300～600gfの範囲にあり、かつ150mm縮ませたときの、製品の胴回り部の伸縮力が50～300gfの範囲にあることを特徴とする使い捨ておむつ。

【0008】(作用効果)製品の見栄えおよび吸収体の変形防止に関する作用効果については、請求項1記載の発明の作用効果と同様であるが、本発明においては、前記伸縮部が前記非伸縮部を除く左右脇部を含む領域にあり、かつ、前記伸縮部を周方向に最大に伸長させた最大伸長状態から100mm縮ませたときの、製品の胴回り部の伸縮力が300～600gfの範囲にあり、かつ150mm縮ませたときの、製品の胴回り部の伸縮力が50～300gfの範囲としたことにより、はきやすくまたははかせやすく、フィット感に優れたものとなる。

【0009】<請求項3記載の発明>前記伸張限界状態の伸縮部100mm×100mmにつき、伸縮部材の質

量が0.05～0.13gである請求項1または2に記載のパンツ型使い捨て紙おむつ。

【0010】(作用効果)前記伸縮部材の質量を伸張限界状態の伸縮部100mm×100mmにつき0.05～0.13gとすることにより、よりはきやすくまたははかせやすく、フィット感に優れたものとなる。

【0011】<請求項4記載の発明>前記非伸縮部の周方向の長さの総和が、胴回り周長の15～40%である請求項1～3のいずれか1項に記載のパンツ型使い捨て紙おむつ。

【0012】(作用効果)上記数値範囲を限定したものであると、請求項1～4における作用効果がより一層際になる。

【0013】<請求項5記載の発明>伸縮部の縦方向の幅が、50～150mmの範囲にある請求項1～4のいずれか1項に記載のパンツ型使い捨て紙おむつ。

【0014】(作用効果)上記数値範囲を限定したものであると、請求項1～4における作用効果がより一層際になる。

【0015】<請求項6記載の発明>前記伸縮部材の収縮している通常状態の長さに対する最大伸長時の長さの割合が250～350%である請求項1～5のいずれか1項に記載のパンツ型使い捨て紙おむつ。

【0016】(作用効果)胴回りのテンションが上記数値範囲内にあると、請求項1～5における作用効果がより一層際になる。

【0017】<請求項7記載の発明>使用状態においてウエスト開口部及び左右のレッグ開口部が形成され、前記ウエスト開口縁から前記レッグ開口始端に至る長さ範囲の胴周り部の少なくとも腰下部に、周方向に沿いかつ前記胴周り部の60%以上の長さ範囲にわたる伸縮部材が配置された伸縮部と伸縮部材が配置されていない非伸縮部とを有するパンツ型使い捨て紙おむつであって、前記伸縮部材は網目状伸縮部材、無孔のフィルム状伸縮部材または孔開きのフィルム状伸縮部材であり、前記非伸縮部が前身頃および後身頃の少なくとも一方の中央部にあり、前記伸縮部がその非伸縮部を除く左右脇部を含む領域にあり、かつ、前身頃と後身頃とを重ねた状態で、前記胴回り部が製品幅方向に伸張限界まで伸張しているときの最大製品幅と前記胴回り部が非伸張の収縮状態にあるときの収縮製品幅との差が、100～250mmであることを特徴とするパンツ型使い捨て紙おむつ。

【0018】(作用効果)伸縮部材が、網目状伸縮部材、無孔のフィルム上伸縮部材、または孔開きのフィルム状伸縮部材であっても同様の作用効果となる。

【0019】

【発明の実施の形態】以下本発明の実施の形態を図面を参照しながらさらに詳説する。

(「本発明の用語の説明」、及びパンツ型使い捨ておむつの第1の実施の形態)主に図1によって、本発明の部

位や方向に関する用語説明をしつつ、図2及び図3によって、第1の実施形態に係るパンツ型使い捨ておむつについて説明する。

【0020】この第1の実施形態に係るパンツ型使い捨ておむつは、図1及び図2に示すように、可撓性の外形シート1と、この外形シート1内面に固定され、股下4を中心として縦方向（前後方向）に延在する吸収主体10とを主体として構成されている。

【0021】外形シート1は2枚または3枚以上の通気・撥水性の不織布を積層固定してなり、この外形シート1と吸収主体10とを重ね合わせた後の製造工程の最終段階で、前身頃Fと後身頃Bとの両側縁部の長手方向全体を超音波シールや熱溶解などの手段により接合する（この接合部を符号30としてある）ことにより、図5に示されているようにウエスト開口部Wおよび左右一対のレッグ開口部Lを形成してある。

【0022】図1の符号において、「縦方向」とは、腹側と背側を結ぶ方向を意味し、「周方向」とは前記縦方向と直交する方向を意味する。「ウエスト開口縁」とはウエスト開口部Wの縁を意味し、「レッグ開口縁」とはレッグ開口部Lの縁を意味する。「レッグ開口始端」とはレッグ開口部Lのレッグ開口縁と接合部30と交差する位置を意味し、レッグ開口縁の始まり個所の意味である。「胴周り部」Tとは、ウエスト開口縁からレッグ開口始端に至る長さ範囲の全体領域を意味する。胴周り部Tは、概念的に「ウエスト部」Wと「腰下部」Uとに分けることができる。これらの縦方向の長さは、製品のサイズによって異なるが、ウエスト部Wは15～40mm、腰下部Uは65～120mmである。

【0023】また、本発明に言う「製品幅」とは、製品時に両側縁間の距離のことを意味する。胴回り部の製品幅がウエスト部Wと腰下部Uとで異なる場合は、特に腰下部Uにおける幅とする。また、製品幅方向とは、前記製品幅に沿う方向である。図4においては製品幅をP、製品幅方向をpwで示してある。従って、最大製品幅とは、前身頃と後身頃を重ねた状態の製品時において胴回り部を前記製品幅方向に引張り、前記伸縮部を伸長限界まで伸長させたときの製品幅のことである。また、収縮幅とは、前身頃と後身頃を重ねた状態の製品時において伸縮部が伸長していない収縮状態にあるときの製品幅のことである。

【0024】一方、本発明に言う、非伸縮部の周方向の長さの総和とは、前身頃、後身頃においてそれぞれ非伸縮部が存在する場合は、それぞれの周方向長の和を言い、胴回り部において非伸縮部が一箇所にしか存在しない場合においてはその周方向の長さである。

【0025】「股部」Lとは、レッグ開口部Lを形成する長さ範囲の全体領域を意味する。また、「中央部」とは、製品の中央線を含む側部を除く中間領域を意味する。「脇部」とは、胴周り部Tにおける両側部を意味す

る。

【0026】吸収主体10は、図3にも示すように、不織布などからなり着用者の肌に直接触れる長方形の透液性トップシート11と、綿状バルブを主体とし、ある程度の剛性を有する（半剛性の）長方形の吸収コア13とその上下面全体を包む額巻きされた長方形のクレープ紙14とからなる吸収体ABと、この吸収体ABの裏面において両側縁近傍まで達する、ポリエチレンプラスチックフィルムなどからなる長方形の不透液性バックシート12とを有し、前記透液性トップシート11は、吸収体ABの両側縁を周り込んで裏面に達し、不透液性バックシート12に重ねられており、これらの各要素はホットメルト接着剤により接着（図中\*で示しているのが接着部分である）一体化されたものである。必要に応じて、図示のように透液性トップシート11とクレープ紙14との間に透液性セカンドシート11Sを介在させることができる。この吸収主体10は、ほぼ裏面全体が前記外形シート1に対して、ホットメルト接着剤により接着して一体化してある。

【0027】吸収主体10の両側部には、使用面側に突出する脚周り起立カフスC、Cがそれぞれ形成され、この起立カフスCは、実質的に幅方向に連続した起立シート40と、伸縮部材、たとえば糸ゴムからなる一本のまたは図示のように複数本の伸縮部材50、50…とにより構成されている。

【0028】さらに詳細には、起立カフスCは、起立シート40を2重に形成され、各伸縮部材50、50…をホットメルト接着剤などにより固着した状態で包んで形成されたものである。各起立カフスC、Cを形成する起立シート40は、透液性でなく不透液性もしくは疎水性であるのが望ましい。また、不織布などの透液性シートに対してシリコン処理などにより液体をはじく性質となるようにしてもよい。さらに、通気もしくは蒸気透過性を有しているのが望ましい。

【0029】二重の起立シート40の内面は、吸収体AB及び不透液性バックシート12の裏面側に回り込んでホットメルト接着剤などにより固着されている。その結果、二重の起立シート40のこの固着始端は、起立カフスCの起立端を形成している。

【0030】この起立端より先端側は、製品本体に固定されていない自由部分である。

【0031】他方、長手方向前後端部において、ホットメルト接着剤などにより、前記自由部分は、その先端が物品の中央側に向かう状態で物品に、具体的には透液性シート1外面に固定されている。

【0032】また、伸縮部材50、50…は、少なくとも1本が自由部分にあることを基本形態とするが、特にその伸縮部材50は自由部分の先端部にあることが好ましく、さらに、図3に示されているように、根元側にも伸縮部材50を有することが好ましい。先端部には、図

示のように複数本有するのがさらに望ましい。

【0033】図2は、紙おむつを長手方向に展開した状態を示しているが、装着時には、紙おむつが舟形に体に装着されるので、そして各伸縮部材50、50…の収縮力が作用するので、製品の前後端はそのまま、脚周りでは、各伸縮部材50、50…の収縮力により起立カフCが起立する。そしてこのとき、吸収主体10の側部を变形させ持ち上げ、また若干吸収体3も变形させつつ持ち上げ、深いポケット空間を形成する。

【0034】左右の起立カフC、Cで囲まれる空間は、尿または軟便の閉じ込め空間を形成する。この空間内に排尿されると、その尿は透液性トップシート1を通して吸収体要素A内に吸収されるとともに、軟便の固形分については、起立カフCがバリヤーとなり、その乗り越えが防止される。

【0035】他方、前身頃F及び後身頃Bの長手方向端部において、ウエスト部Wにおける外形シート1の不織布間には、ウエスト周りのフィット性を高めるために、ウエスト開口部W0の端縁に平行に間隔を置いて細い糸ゴムからなるウエスト伸縮部材20F、20Bが伸縮するように伸長下に配置固定されている。ウエスト部Wにおけるウエスト伸縮部材20F、20Bの間隔および本数は適宜定めることができるが、例えば間隔としては4～8mm程度、本数としては4～10本程度が好ましい。

【0036】そしてかかる構成のもと、本発明に従って、前身頃F及び後身頃Bのウエスト部Wから股部Lの間の領域たる腰下部Uにおける、前身頃Fの下腹部及び後身頃Bの臀部に、周方向に沿って腰下部伸縮部材21F、21Bが設けられている。そして、腰下部伸縮部材21F、21Bはそれぞれ、前身頃F及び後身頃Bにおいて、一方側の接合部30から他方側の接合部30までの部分のうち吸収コア13のほぼ全体を除く製品の左右脇部に設けられている。このとき、一般的なパンツ型使い捨て紙おむつの形態を考慮すれば、腰下部伸縮部材21F、21Bが設けられている伸縮部の縦方向の幅を50～150mmとするのが望ましい。また、腰下部伸縮部材21F、21Bが設けられていない非伸縮部を、その周方向の長さの総和が胴回り周長の15～40%となるようにするのが望ましい。

【0037】さらに本発明では、前身頃と後身頃とを重ねた状態で、胴回り部が製品幅方向に伸張限界まで伸張しているときの最大製品幅と胴回り部が非伸張の収縮状態にあるときの収縮製品幅との差が100～250mm、特に好適には150～200mmとなるように構成するか、または、前身頃と後身頃とを重ねた状態で前記胴回り部を製品幅方向に伸張させたときの胴回り部の製品幅方向の伸縮力が、伸張限界における最大製品幅に対して100mm収縮している状態で300～600gfの範囲にあり、かつ伸張限界における最大製品幅に対し

て150mm収縮している状態で50～300gfの範囲となるようにする。これは、例えば、下記の構成によって達成できる。

【0038】一般的なパンツ型使い捨て紙おむつの形態であれば、最大製品幅は300～400mmとするのが望ましい。また、伸縮部における腰下伸縮部材の質量は、伸張限界状態の伸縮部100mm×100mmにつき0.05～0.13gとするのが望ましい。

【0039】一方、腰下部伸縮部材21F、21Bにおける相互間隔は、ウエスト伸縮部材20F、20Bの間隔に対して同じか、あるいはそれよりも短いものが望ましく、また、これら腰下部伸縮部材21F、21Bとして使用する糸ゴムは、前述のウエスト伸縮部材20として使用する細い糸ゴムよりも伸張応力および断面外径が小さいか、あるいは実質的に同一のものとすることができ、好適には、最大伸長時の長さが、収縮している通常時の長さの250～350%、特に250～300%となるものである。

【0040】図示例では、これら腰下部伸縮部材21F、21Bとして、細い糸ゴム、具体的に太さが620d tex以下とされた伸縮部材が用いられ、前身頃F及び後身頃Bの両者において、縦方向の間隔が7.0mm以下とされ、それぞれ平行に15～40本、外形シート1の不織布間に配置固定されている。このようにすると、図4に模式的に示すように、生成する皺は周方向に幅狭であり、縦方向（周方向に直交する方向）に長さが短く、皺がほぼ縦方向に連続する形態で生成する。そして、各皺の凹または凸はごく小さい。しかも、糸ゴムg部分での括れが殆どなく、外面を構成するシートの色と糸ゴムgの色とが同色である場合に糸ゴムgの存在が判別し難い。

【0041】その結果、皺が目立たず、見えるとしても木目細かい皺であり、全体的には平坦面状の外面を呈し、すっきり感、すなわち製品の外面が「モコモコ」せず、見栄えに優れたパンツ型使い捨て紙おむつとなる。しかも、面として肌に対して押圧されるようにすることにより、局所的な過度の肌への圧迫がないことによりゴム跡の生成がなく、製品の内面と肌との摩擦が全体に及び、びったり接触することによりフィット性が良好であり、製品のずれ落ちが防止される。

【0042】他方、第1の実施の形態においては、股部Lにおける中央部を除く左右部においても股部伸縮部材23を設けてある。この股部伸縮部材23についても、腰下部伸縮部材21F、21Bと同様に、太さが620d tex以下の伸縮部材を縦方向の間隔を7.0mm以下として不織布間に配置固定できる。

【0043】このようにして構成されるパンツ型使い捨て紙おむつは、前身頃と後身頃とを重ねた状態で、胴回り部が製品幅方向に伸張限界まで伸張しているときの最大製品幅と胴回り部が非伸張の収縮状態にあるときの収

縮製品幅との差が100～250mmであり、また、前身頃と後身頃とを重ねた状態で胴回り部を製品幅方向に伸張させたときの胴回り部の製品幅方向の伸縮力が、伸張限界における最大製品幅に対して100mm収縮している状態で300～600gfの範囲にあり、かつ伸張限界における最大製品幅に対して150mm収縮している状態で50～300gfの範囲にある製品となるため、はかせやすくまたははきやすく、しかも、フィット感に優れるものとなる。

【0044】（その他の実施の形態）本発明は、少なくとも腰下部に、周方向に沿って伸縮部材が配置された伸縮部と伸縮部材が配置されていない非伸縮部とを有するものであり、ウエスト部および股部における伸縮部材の配置については特に限定されない。また、非伸縮部は、前身頃および後身頃の少なくとも一方の中央部にあればよく、したがって、前身頃Fと後身頃Bとの間で伸縮部材の配設形態を相違させることもできる。ここで、実施例1に示す形態以外の本発明の形態を図6の（A）～（D）に示す。

【0045】（A）の形態は、ウエスト伸縮部材20F、20Bの配置は、第1の実施の形態と同様で、股部伸縮部材23が配設されていない形態である。（B）の形態は、股部伸縮部材23の配置は、第1の実施の形態と同様であり、ウエスト伸縮部材20F、20Bが、前身頃および後身頃の両方における中央部には配置されない形態である。（C）の形態は、ウエスト伸縮部材20F、20Bが、前身頃および後身頃において中央部には配置されず、股部伸縮部材23が配置された形態となっている。（D）の形態は、前身頃における各伸縮部材の配置は、実施例1と同様であるが、後身頃においては腰下部伸縮部材21Bが中央部にも配置されている形態となっている。このように伸縮部材の配設形態は適宜であることを付言する。また、本発明においては、腰下部伸縮部材21F、21B端部、または股部伸縮部材23の端部が吸収コア13の側縁部に重なる場合と、吸収コア13の側縁に達しないで離間する場合との両者を含む。

【0046】また、上記例はほぼ砂時計形状の外形シート1に対して長方形の吸収主体10を接合してあるが、外形シート1と同形状の透液性トップシート11を設け、これらの間に吸収体ABを設ける形態でもよい。さらに、外形シート1と吸収主体10とが境界なく一体化してある形態でもよい。

【0047】製品の外面を構成するシートは、上記例では2枚または3枚以上の通気・撥水性の不織布を積層固定したものであるが、1枚の不織布でもよく、この場合にはその不織布の使用面側に伸縮部材21を接合することができる。さらに積層する不織布間の中間にプラスチックシートを介在させたり、または裏面側不織布の使用面側に張り合わせたりすることができる。

【0048】腰下部伸縮部材21Fまたは腰下部伸縮部

材21Bは、格子網状に配設することでもよい。この1例が（D）に示す形態である。

【0049】他方で、製品の中央部（吸収コアのほぼ全体領域）に、図7に示すように、不透液性バックシート12の裏面側にキャラクターなどのデザインをたとえば印刷により施すことができる。このデザイン部分は、ある程度の剛性を有する吸収コア13を有し、かつ本発明にしたがって外形シート1が変形したり皺を生じたりすることがないために、そのデザインが崩れることなく鮮明に分かるものとなる。このようにすると、誰でも一目で前後を判別でき、おむつ換えが楽しくなり、着用者も喜ぶものとなる。デザインを施したデザインシートを外形シート間に介在させることもよい。また、外形シート1にデザイン印刷することもできる。

【0050】（伸縮部材について）上記の伸縮部材としては、天然ゴムや合成ゴムなどの材質のほか、ウレタンなどの弾性伸縮性のものを用いることができる。また、細帯状の弾性伸縮性帯や、面積的に大きいシート状のものも使用できる。これらの例として、ウレタンなどの帯、フィルムまたはシートなどがある。フィルムとしては無孔フィルムや孔開きフィルム、さらにシートとしては網目状のシートなどを適宜選択できる。無孔フィルム60の配設例を図8に示した。また、網目状のフィルム61の配設例を図9に示した。これらの形態においても、本発明にかかる構成、すなわち、前記伸縮部が収縮している通常状態の製品幅と伸縮部を周方向に最大に伸張させた最大伸長状態の製品幅との差を100～250mmにするか、あるいは前記伸縮部を周方向に最大に伸張させた最大伸長状態から100mm縮ませたときの、製品の胴回り部の伸縮力が300～600gfの範囲にあり、かつ150mm縮ませたときの、製品の胴回り部の伸縮力が50～300gfの範囲にすることが重要である。

【0051】

【発明の効果】以上のとおり、本発明によれば、皺が目立たつことがなく、製品の見栄えとしてすっきりしたものとなり、しかも、はかせやすくまたははきやすく、しかも、フィット性に優れるなどの利点がもたらされる。

【図面の簡単な説明】

【図1】本発明の用語説明のための、第1の実施の形態の展開状態使用面側からの平面図である。

【図2】第1の実施の形態の展開状態使用面側からの平面図である。

【図3】その5-5線矢視図である。

【図4】第1の実施の形態製品の斜視図である。

【図5】本発明製品の皺の発生状況概要図である。

【図6】伸縮部材の配設形態の説明図である。

【図7】製品の表裏のデザイン例を示す図である。

【図8】別の伸縮部材を設けた実施の形態の展開状態使用面側からの平面図である。



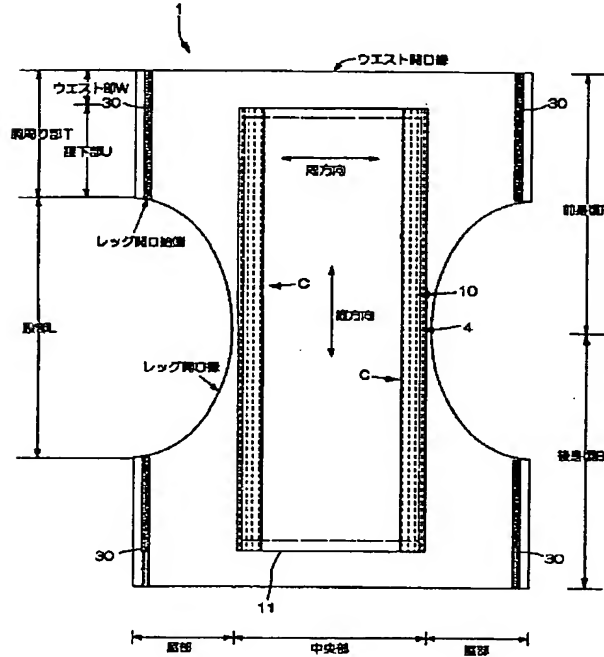
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【図9】他の伸縮部材を設けた実施の形態の展開状態使用面側からの平面図である。

【符号の説明】

1…外形シート、4…股下、10…吸収主体、12…バックシート、13…吸収コア、Ab…吸収体、C…バリ\*

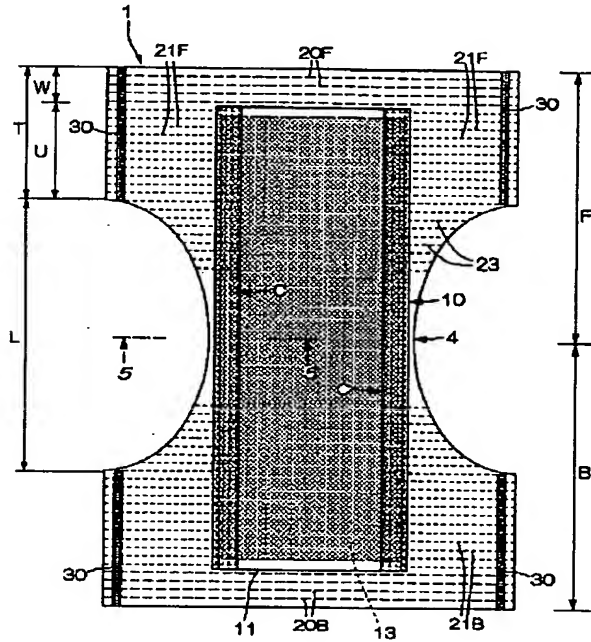
【図1】



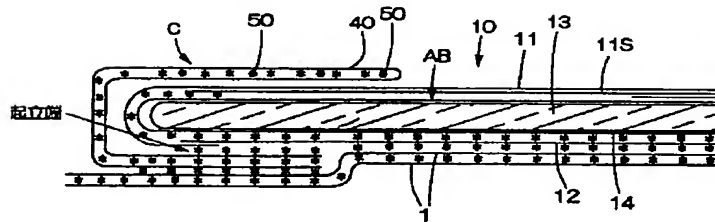
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\*ヤーカフス、20…ウエスト伸縮部材、21b, 21f…腰下部伸縮部材、23…股部伸縮部材、T…胴周部、u…腰下部、l…股部、w…ウエスト部、wO…ウエスト開口部、lO…レッグ開口部。

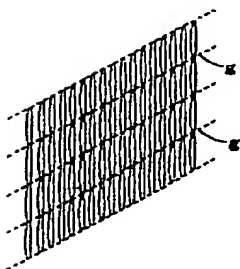
【図2】



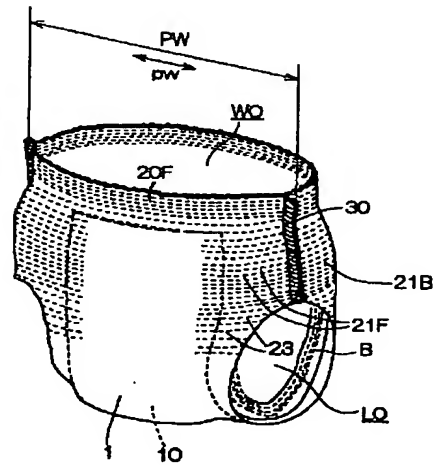
【図3】



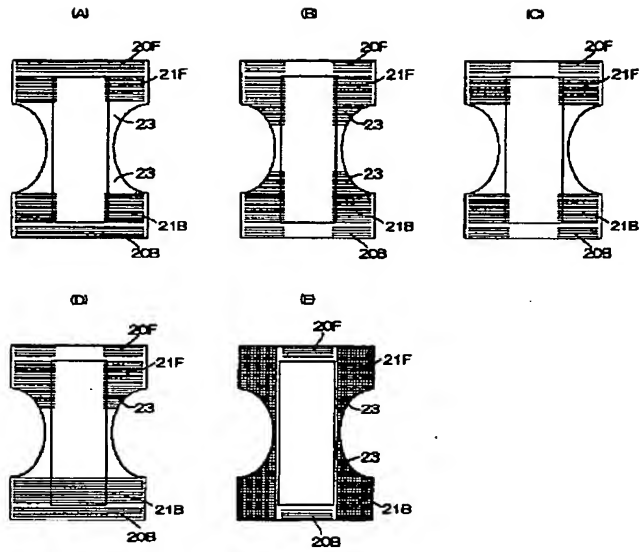
【図5】



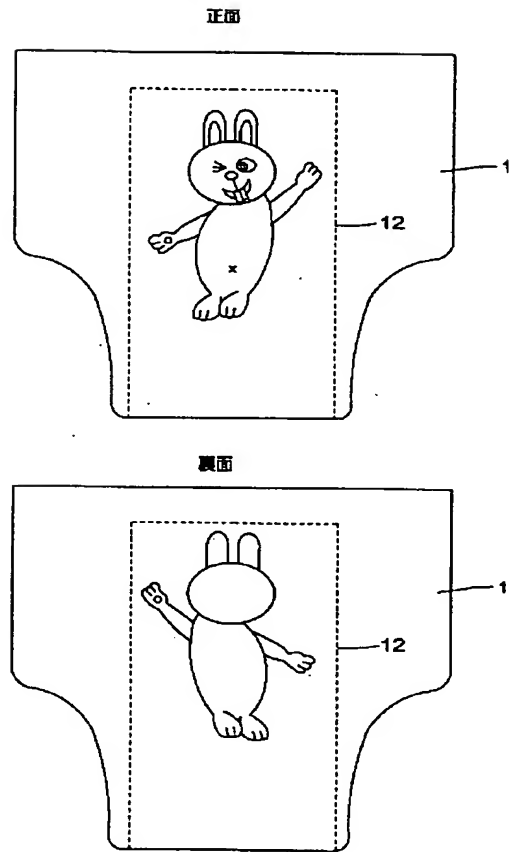
【図4】



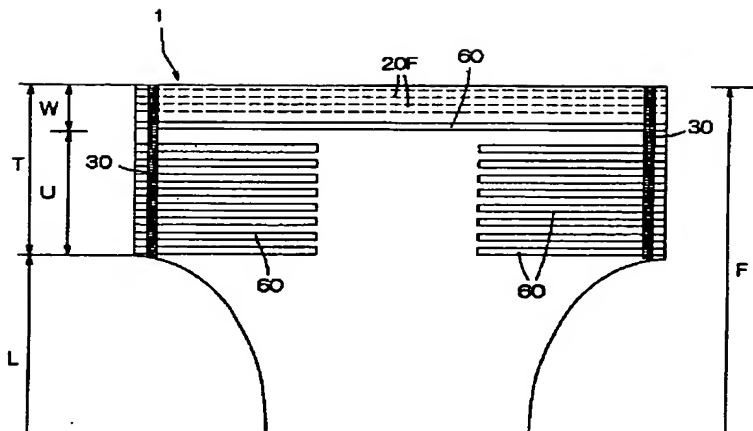
【図6】



【図7】

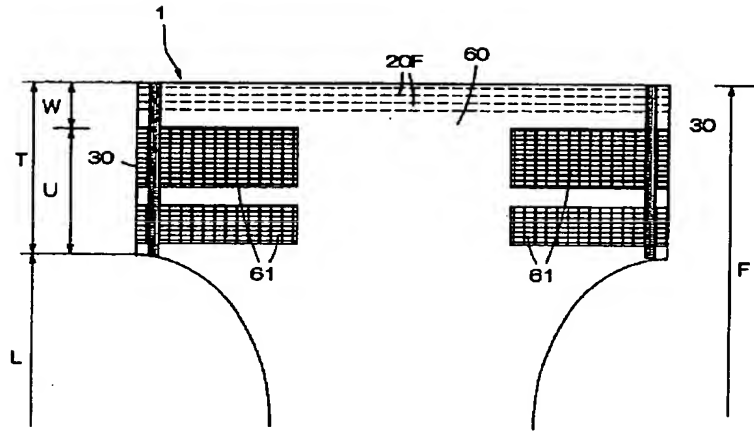


【図8】





【図9】



フロントページの続き

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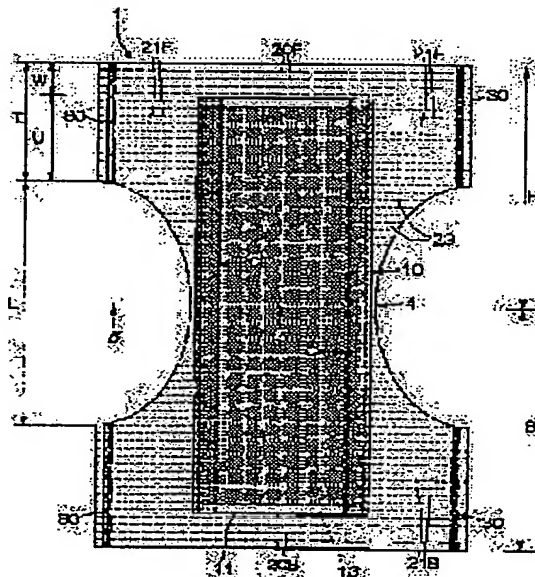
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## (54) UNDERWEAR STYLE DISPOSABLE PAPER DIAPER

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To improve an appearance and a fitting property of an underwear style disposable paper diaper.

**SOLUTION:** A non-stretchable section in an under waist section U is located at the central section of at least one of a front body section and a rear body section. A stretchable section in the under waist section is located in a region including right and left side sections, excepting the non-stretchable section. Also, a difference between a maximum product width when the body peripheral section is stretched to the stretching limit in the product width direction, and a shrunk product width when the body peripheral section is under a non-stretched and shrunk state is set to be 100 to 250 mm under a state wherein the front body section and the rear body section are superposed.



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2. \*\*\*\* shows the word which can not be translated.

3. In the drawings, any words are not translated.

## CLAIMS

### [Claim(s)]

[Claim 1] In a busy condition, waist opening and leg opening on either side are formed. The circumference section of a drum of the die-length range from said waist opening edge to said leg opening start edge at least in the skid-base section It is the trousers mold disposable disposable diaper which has the flexible section by which two or more flexible members which have spacing of 7.0mm or less in a lengthwise direction along a hoop direction have been arranged, and the section by which the flexible member is not arranged non-contracting [ expand and ]. said section non-contracting [ expand and ] -- the later self at the past time -- the field to which it is in one [ at least ] center section at the time, and said flexible section contains the left right flank section except the section non-contracting [ expand and ] -- it is -- and past time and later self, where time is passed The trousers mold disposable disposable diaper with which a difference with contraction product width of face in case the maximum product width of face and said periphery section when said periphery section is developing to an elongation limitation crosswise [ product ] are in the contraction condition of not elongating is characterized by being 100-250mm.

[Claim 2] In a busy condition, waist opening and leg opening on either side are formed. The circumference section of a drum of the die-length range from said waist opening edge to said leg opening start edge at least in the skid-base section It is the trousers mold disposable disposable diaper which has the flexible section by which the flexible member has been arranged along a hoop direction, and the section by which the flexible member is not arranged non-contracting [ expand and ]. It is in one [ at least ] center section at the time. said section non-contracting [ expand and ] -- the later self at the past time -- It is in the field to which said flexible section contains the left right flank section except the section non-contracting [ expand and ]. past time and later self -- the flexible force of the product cross direction of the periphery section when expanding said periphery section crosswise [ product ], where time is passed The trousers mold disposable diaper characterized by being in the range of 50-300gf in the condition of being in the range of 300-600gf in the condition of having contracted 100mm to the maximum product width of face in an elongation limitation, and having contracted 150mm to the maximum product width of face in an elongation limitation.

[Claim 3] flexible section 100mmx of said elongation critical state -- the trousers mold disposable disposable diaper according to claim 1 or 2 whose mass of the flexible member per 100mm is 0.05-0.13g.

[Claim 4] A trousers mold disposable disposable diaper given in any 1 term of claims 1-3 whose total of the die length of the hoop direction of said section non-contracting [ expand and ] is 15 - 40% of the periphery perimeter.

[Claim 5] A trousers mold disposable disposable diaper given in any 1 term of claims 1-4 which have the width of face of the lengthwise direction of said flexible section in the range of 50-150mm.

[Claim 6] A trousers mold disposable disposable diaper given in any 1 term of claims 1-5 whose percentages of the die length at the time of the maximum expanding to the die length of the normal state which has contracted said flexible member are 250 - 350%.

[Claim 7] In a busy condition, waist opening and leg opening on either side are formed. The circumference section of a drum of the die-length range from said waist opening edge to said leg opening start edge at least in the skid-base section It is the trousers mold disposable disposable diaper which has the flexible section by which the flexible member covering 60% or more of die-length range of the circumference section of said drum has been arranged along a hoop direction, and the section by which the flexible member is not arranged non-contracting [ expand and ]. It is the film-like flexible member of an aperture. said flexible member -- a mesh-like flexible member, a nonporous film-like flexible member, or a hole -- said section non-contracting [ expand and ] -- the later self at the past time -- the field to which it is in one [ at least ] center section at the time, and said flexible section contains the left right flank section except the section non-contracting [ expand and ] -- it is -- and past time and later self, where time is passed The trousers mold disposable disposable diaper with which a difference with contraction product width of face in case the maximum product width of face and said periphery section when said periphery section is developing to an elongation limitation crosswise [ product ] are in the contraction condition of not elongating is characterized by being 100-250mm.

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[Translation done.]

**\* NOTICES \***

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a trousers mold disposable disposable diaper and the trousers mold disposable disposable diaper which has the flexible section of the circumference section of a drum of the die-length range from said waist opening edge to [ in a busy condition, waist opening and leg opening on either side are formed especially, and ] said leg opening start edge by which the flexible member has been arranged at least along a hoop direction at the skid-base section, and the section by which the flexible member is not arranged non-contracting [ expand and ].

[0002]

[Description of the Prior Art] In recent years, the trousers mold disposable disposable diaper is used widely. In this case, especially about the circumference of a drum, as for the flexible member which can be set, yarn rubber is usually used, this yarn rubber is arranged to the perimeter of the field made unevenly distributed in the waist opening veranda of the circumference section of a drum (field of the die-length range from a waist opening edge to the leg opening start edge), and arrangement spacing has 10 commonmm or more. Moreover, it is small in arrangement spacing of waist opening, and in order to prevent too much abdominal pressure, arrangement spacing of the skid-base section (it is a part by the side of length from the crotch to the cuff from waist opening) is usually enlarged. However, the fault of this kind of product was that an indecent wrinkle occurs. Then, the trousers mold disposable disposable diaper which established the field which does not have a flexible member in the circumference section of said drum, and prevented the indecent formation of wrinkles is proposed.

[0003]

[Problem(s) to be Solved by the Invention] This kind of trousers mold disposable disposable diaper was very good-looking, however depending on the case, at the time of use, are hard to dispose of this kind of trousers mold disposable disposable diaper, or it was hard to put it on, or it might slip down at it. Moreover, a desired feeling of a fit might not be obtained.

[0004] Then, this invention is to offer the trousers mold disposable disposable diaper which is excellent in a feeling of a fit, without solving many of those problems, being easy to dispose of appearance, or being further often easy to vomit it at the time of use, and gap omission arising.

[0005]

[Means for Solving the Problem] It is as degree account at this invention which solved the above-mentioned technical problem.

In a <according to claim 1 invention> busy condition, waist opening and leg opening on either side are formed. The circumference section of a drum of the die-length range from said waist opening edge to said leg opening start edge at least in the skid-base section It is the trousers mold disposable disposable diaper which has the flexible section by which two or more flexible members which have spacing of 7.0mm or less in a lengthwise direction along a hoop direction have been arranged, and the section by which the flexible member is not arranged non-contracting [ expand and ]. It is in one [ at least ] center section at the time. said section non-contracting [ expand and ] — the later self at the past time — The trousers mold disposable

disposable diaper characterized by the difference of the product width of face of the normal state which is in the field to which said flexible section contains the left right flank section except said section non-contracting [ expand and ], and said flexible section has contracted, and the product width of face in the maximum expanding condition of having made the hoop direction elongating said flexible section to max being 100-250mm.

[0006] (The operation effectiveness) the place where a center section (center section of the hoop direction) is conspicuous when seeing a product — this invention — setting — said section non-contracting [ expand and ] — the later self at the past time — since it is in one [ at least ] center section at the time, there is no formation of wrinkles in this part, and it excels in the appearance of a product. Furthermore, deformation of the absorber which exists in a center section is prevented. And by having set to 100-250mm the difference of the product width of face of the normal state which is in the field to which said flexible section contains the left right flank section except said section non-contracting [ expand and ], and said flexible section has contracted, and the product width of face in the maximum expanding condition of having made the hoop direction elongating said flexible section to max, it is easy to vomit, or is easy to dispose, and becomes the thing excellent in a feeling of a fit.

[0007] In a <according to claim 2 invention> busy condition, waist opening and leg opening on either side are formed. The circumference section of a drum of the die-length range from said waist opening edge to said leg opening start edge at least in the skid-base section It is the trousers mold disposable disposable diaper which has the flexible section by which the flexible member has been arranged along a hoop direction, and the section by which the flexible member is not arranged non-contracting [ expand and ]. It is in one [ at least ] center section at the time. said section non-contracting [ expand and ] — the later self at the past time — It is in the field to which said flexible section contains the left right flank section except said section non-contracting [ expand and ]. The time of shrinking said flexible section with a hoop direction by 100mm from the maximum expanding condition which max was made to elongate, The disposable diaper characterized by the flexible force of the periphery section of a product at the time of the flexible force of the periphery section of a product being in the range of 300-600gf, and making it shrunken by 150mm being in the range of 50-300gf.

[0008] (The operation effectiveness) Although it is the same as that of the operation effectiveness of invention according to claim 1 about the operation effectiveness about the appearance of a product, and deformation prevention of an absorber It is in the field to which said flexible section contains the left right flank section except said section non-contracting [ expand and ] in this invention. And the time of shrinking said flexible section with a hoop direction by 100mm from the maximum expanding condition which max was made to elongate, When the flexible force of the periphery section of a product at the time of the flexible force of the periphery section of a product being in the range of 300-600gf, and making it shrunken by 150mm considered as the range of 50-300gf, it is easy to vomit, or is easy to dispose, and becomes the thing excellent in a feeling of a fit.

[0009] <invention according to claim 3> — flexible section 100mmx of said elongation critical state — the trousers mold disposable disposable diaper according to claim 1 or 2 whose mass of the flexible member per 100mm is 0.05-0.13g.

[0010] (The operation effectiveness) the mass of said flexible member — flexible section 100mmx of the elongation critical state — by considering as per [ 0.05-0.13g ] 100mm, it is easier to vomit, or is easy to dispose, and becomes the thing excellent in a feeling of a fit.

[0011] <Invention according to claim 4> Trousers mold disposable disposable diaper given in any 1 term of claims 1-3 whose total of the die length of the hoop direction of said section non-contracting [ expand and ] is 15 - 40% of the periphery perimeter.

[0012] (The operation effectiveness) If the above-mentioned numerical range is limited, the operation effectiveness in claims 1-4 will become \*\* further.

[0013] A trousers mold disposable disposable diaper given in any 1 term of claims 1-4 which have the width of face of the lengthwise direction of the <according to claim 5 invention> flexible section in the range of 50-150mm.

[0014] (The operation effectiveness) If the above-mentioned numerical range is limited, the

operation effectiveness in claims 1-4 will become \*\* further.

[0015] <Invention according to claim 6> Trousers mold disposable disposable diaper given in any 1 term of claims 1-5 whose percentages of the die length at the time of the maximum expanding to the die length of the normal state which has contracted said flexible member are 250 - 350%.

[0016] (The operation effectiveness) If the tension of a periphery is in above-mentioned numeric-value within the limits, the operation effectiveness in claims 1-5 will become \*\* further.

[0017] In a <according to claim 7 invention> busy condition, waist opening and leg opening on either side are formed. The circumference section of a drum of the die-length range from said waist opening edge to said leg opening start edge at least in the skid-base section It is the trousers mold disposable disposable diaper which has the flexible section by which the flexible member covering 60% or more of die-length range of the circumference section of said drum has been arranged along a hoop direction, and the section by which the flexible member is not arranged non-contracting [ expand and ]. It is the film-like flexible member of an aperture. said flexible member --- a mesh-like flexible member, a nonporous film-like flexible member, or a hole --- said section non-contracting [ expand and ] --- the later self at the past time --- the field to which it is in one [ at least ] center section at the time, and said flexible section contains the left right flank section except the section non-contracting [ expand and ] --- it is --- and past time and later self, where time is passed The trousers mold disposable disposable diaper with which a difference with contraction product width of face in case the maximum product width of face and said periphery section when said periphery section is developing to an elongation limitation crosswise [ product ] are in the contraction condition of not elongating is characterized by being 100-250mm.

[0018] (The operation effectiveness) a flexible member --- a mesh-like flexible member, a nonporous flexible-on film member, or a hole --- even if it is the film-like flexible member of an aperture, it becomes the same operation effectiveness.

[0019]

[Embodiment of the Invention] The gestalt of operation of this invention is explained further in full detail below, referring to a drawing.

("Explanation of the vocabulary of this invention", and gestalt of operation of the 1st of a trousers mold disposable diaper) Drawing 2 and drawing 3 mainly explain the trousers mold disposable diaper concerning the 1st operation gestalt, giving vocabulary explanation about the part and direction of this invention by drawing 1 .

[0020] It is fixed to flexible appearance sheet 1 and this appearance sheet 1 inside, and the trousers mold disposable diaper concerning this 1st operation gestalt is constituted considering the absorption subject 10 who extends in a lengthwise direction (cross direction) focusing on length from the crotch to the cuff 4 as a subject, as shown in drawing 1 and drawing 2 .

[0021] The appearance sheet 1 is the culmination of the production process after coming to carry out laminating immobilization of the aeration and the water-repellent nonwoven fabric of two sheets or three sheets or more and piling up this appearance sheet 1 and the absorption subject 10. past time --- F and later self --- time --- B --- by what (this joint is made into the sign 30) the whole longitudinal direction of the edges-on-both-sides section is joined for with means, such as an ultrasonic seal and thermofusion, the waist opening WO and the leg opening LO of a Uichi Hidari pair are formed as shown in drawing 5 .

[0022] In the sign of drawing 1 , a "lengthwise direction" means the direction which connects a venter and a backside, and a "hoop direction" means the direction which intersects perpendicularly with said lengthwise direction. A "waist opening edge" means the edge of the waist opening WO, and a "leg opening edge" means the edge of the leg opening LO. The "leg opening start edge" means the location which intersects the leg opening edge of the leg opening LO, and a joint 30, and means the beginning part of a leg opening edge. The "circumference section of a drum" T means the whole die-length range field from a waist opening edge to the leg opening start edge. The circumference section T of a drum can be notionally divided into the "waist section" W and the "skid-base section" U. Although the die length of these lengthwise directions changes with sizes of a product, 15-40mm and the skid-base section U of the waist



section W are 65–120mm.

[0023] Moreover, the “product width of face” told to this invention means the thing of the distance between edges on both sides at the time of a product. Especially when the product width of face of the periphery section differs in the waist section W and the skid-base section U, it considers as the width of face in the skid-base section U. Moreover, the product cross direction is a direction which meets said product width of face. In drawing 4, PW shows product width of face and pw has shown the product cross direction. therefore, the maximum product width of face — past time and later self — it is the thing of the product width of face when expanding tension and said flexible section crosswise [ said / product ] for the periphery section to an expanding limitation at the time of the product in the condition of having passed time. moreover, contraction width of face — past time and later self — it is the thing of the product width of face when being in the contraction condition which the flexible section is not elongating at the time of the product in the condition of having passed time.

[0024] total of the die length of the hoop direction of the section told to this invention on the other hand non-contracting [ expand and ] — past time — later self — when the sum of each hoop direction length is said when the section non-contracting [ expand and ] exists at the time, respectively, and the section non-contracting [ expand and ] does not exist in one place in the periphery section, it is the die length of the hoop direction.

[0025] “Crotch” L means the whole die-length range field which forms the leg opening LO. Moreover, a “center section” means the staging area except a flank including Chuo Line of a product. “The near section” means the both-sides section in the circumference section T of a drum.

[0026] The liquid permeability top sheet 11 of the rectangle which consists of a nonwoven fabric etc. and touches a wearer's skin directly as the absorption subject 10 also shows drawing 3, The absorber AB which consists of an absorption core 13 of the rectangle which makes curdy pulp a subject and has a certain amount of rigidity (semi-rigid), and crepe paper 14 of the rectangle which wraps the whole vertical side, and by which the frame volume was carried out, It has the non-liquid permeability backseat 12 of the rectangle which consists of polyethylene plastic film which reaches to near the edges on both sides in the rear face of this absorber AB. Said liquid permeability top sheet 11 arrived at the rear face in surroundings \*\*\*\*, and has put the edges on both sides of Absorber AB on the non-liquid permeability backseat 12, and the adhesion (\* in drawing shows [ the amount of jointing ]) unification of each of these elements is carried out with hot melt adhesive. Liquid permeability second sheet 11S can be made to intervene between the liquid permeability top sheet 11 and crepe paper 14 like illustration if needed. Mostly, the whole rear face pastes up with hot melt adhesive to said appearance sheet 1, and this absorption subject 10 is unified.

[0027] The circumference standing-up cuffs C and C of a foot which project in a use side side are formed, respectively, and these standing-up cuffs C are constituted by two or more flexible members 50 and 50 — by the absorption subject's 10 both-sides section like 1 or illustration which serves as the standing-up sheet 40 which continued crosswise substantially from a flexible member, for example, yarn rubber.

[0028] Furthermore, the standing-up cuffs C are formed in a duplex in the standing-up sheet 40, wrap each flexible member 50 and 50 — in the condition of having fixed with hot melt adhesive etc., and are formed in a detail. As for the standing-up sheet 40 which forms each standing-up cuffs C and C, it is desirable that they are not liquid permeability but non-liquid permeability or hydrophobicity. Moreover, you may make it become the property which crawls a liquid by siliconizing etc. to liquid-permeable sheets, such as a nonwoven fabric. Furthermore, it is desirable to have aeration or steamy permeability.

[0029] The inside of the standing-up sheet 40 of a duplex turned to the rear-face side of Absorber AB and the non-liquid permeability backseat 12, and has fixed with hot melt adhesive etc. Consequently, this fixing start edge of the standing-up sheet 40 of a duplex forms the standing-up edge of the standing-up cuffs C.

[0030] It is the free part by which the tip side is not being fixed to the body of a product from this standing-up edge.

[0031] On the other hand, in the longitudinal direction order edge, said free part is specifically being fixed to goods by liquid-permeable sheet 1 external surface in the condition that the tip goes to the central site of goods, with hot melt adhesive etc.

[0032] Moreover, although it makes for the flexible member 50 and 50 -- to have at least one in a free part into basic form voice, it is still more desirable [ it is desirable that especially the flexible member 50 is in the point of a free part, and ] to have the flexible member 50 also in a root side as shown in drawing 3 . It is still more desirable to have two or more like illustration in a point.

[0033] Although the condition of having developed the disposable diaper to the longitudinal direction is shown, since boat form is equipped with a disposable diaper on the body at the time of wearing, drawing 2 is each flexible members 50 and 50. -- Since a shrinkage force acts, a product order edge remains as it is, and at the circumference of a foot, they are each flexible members 50 and 50. -- The standing-up cuffs C stand up according to a shrinkage force. And at this time, the absorption subject's 10 flank is made to transform and it raises, and it raises, also making an absorber 3 transform a little, and deep pocket space is formed.

[0034] Urine or a loose passage shuts up the space surrounded at the standing-up cuffs C and C on either side, and it forms space. If it urinates in this space, while that urine is absorbed in the absorber element AB through the liquid permeability top sheet 1, about the solid content of a loose passage, the standing-up cuffs C will serve as a barrier, and that riding \*\*\* will be prevented.

[0035] on the other hand, the later self at the past time F -- time -- the waist flexible member 20 of B which keeps spacing between the nonwoven fabrics of the appearance sheet 1 in the waist section W in a longitudinal direction edge in parallel [ in order to raise the fit nature of the circumference of the waist ] with the edge of the waist opening WO, and consists of thin yarn rubber -- arrangement immobilization is carried out under expanding so that F and 20B may expand and contract. Although spacing and the number of the waist flexible members 20F and 20B in the waist section W can be appointed suitably, as spacing, about 4-10 are desirable as about 4-8mm and a number, for example.

[0036] and the basis of this configuration and this invention -- following -- the later self at the past time F -- time -- between the waist section W of B to the crotches L -- a field -- the past time in the skid-base section U -- the hypogastrium of F, and later self -- time -- B -- the skid-base section flexible members 21F and 21B are formed in the hip along the hoop direction. and the skid-base section flexible members 21F and 21B -- respectively -- the later self at the past time F -- time -- B -- setting -- the joint 30 of one side to the other side -- it is prepared in the left right flank section of the product excluding the whole almost of the absorption core 13 among the parts to a joint 30. If the gestalt of a common trousers mold disposable disposable diaper is taken into consideration at this time, it is desirable to set to 50-150mm width of face of the lengthwise direction of the flexible section in which the skid-base section flexible members 21F and 21B are formed. Moreover, it is desirable to make the section in which the skid-base section flexible members 21F and 21B are not formed non-contracting [ expand and ] total of the die length of the hoop direction become 15 - 40% of the periphery perimeter.

[0037] further -- this invention -- past time and later self -- a difference with contraction product width of face where time is passed, in case the maximum product width of face and the periphery section when the periphery section is developing to an elongation limitation crosswise [ product ] are in the contraction condition of not elongating 100-250mm [ whether it constitutes so that it may be especially set to 150-200mm suitably, and ] or past time and later self -- the flexible force of the product cross direction of the periphery section when expanding said periphery section crosswise [ product ], where time is passed It is made to become the range of 50-300gf in the condition of being in the range of 300-600gf in the condition of having contracted 100mm to the maximum product width of face in an elongation limitation, and having contracted 150mm to the maximum product width of face in an elongation limitation. The following configuration can attain this.

[0038] If it is the gestalt of a common trousers mold disposable disposable diaper, as for the maximum product width of face, it is desirable to be referred to as 300-400mm. moreover, the

mass of the skid-base flexible member in the flexible section — flexible section 100mmx of the elongation critical state — it is desirable to consider as per [ 0.05–0.13g ] 100mm.

[0039] On the other hand, skid-base section flexible member 21F and mutual spacing which can be 21B Set The yarn rubber which it is the same, or a thing shorter than it is desirable, and is used to spacing of the waist flexible members 20F and 20B as these skid-bases section flexible members 21F and 21B Elongation stress and a cross-section outer diameter are smaller than the thin yarn rubber used as the above-mentioned waist flexible member 20, or it can consider as the same thing substantially. Suitably The die length at the time of the maximum expanding is the thing of the die length at the time of usual [ contracted ] which becomes 250 – 300% especially 250 to 350%.

[0040] in the example of illustration, thin yarn rubber and the flexible member by which the size was concretely set to 620 or less dtexes use as these skid-bases section flexible members 21F and 21B — having — the later self at the past time F — time — B — in both, spacing of a lengthwise direction is set to 7.0mm or less, and arrangement immobilization is carried out between the nonwoven fabrics of 15–40 and the appearance sheet 1 at parallel, respectively. If it does in this way, as typically shown in drawing 4, the wrinkle to generate will be generated with the gestalt with which it is narrow, die length is short to a lengthwise direction (direction which intersects perpendicularly with a hoop direction), and a wrinkle follows a hoop direction mostly in a lengthwise direction. And the concave or the convex of each wrinkle is very small. And there is almost no constriction by the yarn rubber g part, and when the color of a sheet and the color of yarn rubber g which constitute external surface are the same color, it is hard to distinguish existence of yarn rubber g.

[0041] Consequently, a wrinkle is not conspicuous, though it is visible, it is a fine wrinkle, and shapely, "MOKOMOKO" is not carried out but the external surface of admiration, i.e., a product, serves as [ on the whole flat side-like external surface is presented ] a trousers mold disposable disposable diaper excellent in appearance. And by making it pressed to the skin as a field, when there is no pressure to too much local skin, there is no generation of the remains of rubber, friction with the inside of a product and the skin attains to the whole, by contacting exactly, fit nature is good and the gap omission of a product is prevented.

[0042] On the other hand, in the gestalt of the 1st operation, the crotch flexible member 23 is formed also in the right-and-left section except the center section in Crotch L. About this crotch flexible member 23 as well as the skid-base section flexible members 21F and 21B, a size sets spacing of a lengthwise direction to 7.0mm or less, and can carry out arrangement immobilization of the flexible member of 620 or less dtexes between nonwoven fabrics.

[0043] Thus, the trousers mold disposable disposable diaper constituted A difference with contraction product width of face where time is passed, in case the maximum product width of face and the periphery section when the periphery section is developing to an elongation limitation crosswise [ product ] are in the contraction condition of not elongating is 100–250mm. past time and later self — moreover, past time and later self — the flexible force of the product cross direction of the periphery section when expanding the periphery section crosswise [ product ], where time is passed It is in the range of 300–600gf in the condition of having contracted 100mm to the maximum product width of face in an elongation limitation. And since it becomes the product which is in the range of 50–300gf in the condition of having contracted 150mm to the maximum product width of face in an elongation limitation, it is easy to dispose, or is easy to vomit, and, moreover, excels in a feeling of a fit.

[0044] (Gestalt of other operations) This invention has at least the flexible section by which the flexible member has been arranged along a hoop direction at the skid-base section, and the section by which the flexible member is not arranged non-contracting [ expand and ], and is not limited especially about arrangement of the flexible member in the waist section and a crotch. moreover, the section non-contracting [ expand and ] — the later self at the past time — one [ at least ] center section at the time — it is — ~~\*\*\*ing~~ — therefore, past time — F and later self — time — B — the arrangement gestalt of a flexible member can also be made different in between Here, the gestalt of this inventions other than the gestalt shown in an example 1 is shown in (A) – (D) of drawing 6.

[0045] The gestalt of arrangement of the waist flexible members 20F and 20B of (A) is the same as the gestalt of the 1st operation, and is a gestalt in which the crotch flexible member 23 is not arranged. the gestalt of (B) -- arrangement of the crotch flexible member 23 -- the gestalt of the 1st operation -- the same -- the waist flexible members 20F and 20B -- the later self at the past time -- it is the gestalt which is not arranged in a center section [ / at both times ]. the gestalt of (C) -- the waist flexible members 20F and 20B -- the later self at the past time -- it is the gestalt by which it has not been arranged in a center section at the time, but the crotch flexible member 23 has been arranged. although the gestalt of arrangement of each flexible member at the past time of (D) is the same as an example 1 -- later self -- it is the gestalt by which skid-base section flexible member 21B is arranged also in the center section at the time. Thus, the arrangement gestalt of a flexible member comes out suitably, and adds a certain thing. Moreover, in this invention, both case where skid-base section flexible member 21F, 21B edge, or the edge of the crotch flexible member 23 laps with the side edge section of the absorption core 13, and case where it estranges without reaching the side edge of the absorption core 13 are included.

[0046] Moreover, although the above-mentioned example has joined the rectangular absorption subject 10 to the appearance sheet 1 of a sandglass configuration mostly, the gestalt which forms the appearance sheet 1 and the isomorphism-like liquid permeability top sheet 11, and forms Absorber AB among these is sufficient. Furthermore, the gestalt currently unified without the boundary is satisfactory for the appearance sheet 1 and the absorption subject 10.

[0047] Although the sheet which constitutes the external surface of a product carries out laminating immobilization of the aeration and the water-repellent nonwoven fabric of two sheets or three sheets or more in the above-mentioned example, the nonwoven fabric of one sheet is sufficient as it, and it can join the flexible member 21 to the use side side of that nonwoven fabric in this case. A sheet plastic can be made to be able to intervene in the middle between the nonwoven fabrics which furthermore carry out a laminating, or it can be made to rival in the use side side of a rear-face side nonwoven fabric.

[0048] It is possible for skid-base section flexible member 21F or skid-base section flexible member 21B to arrange in the shape of a grid network. This one example is the gestalt shown in (D).

[0049] On the other hand, in the center section (almost whole field [ Absorption core ]) of the product, as shown in drawing 7, the character etc. can be designed by printing at the rear-face side of the non-liquid permeability backseat 12. Since it has the absorption core 13 which has a certain amount of rigidity, and the appearance sheet 1 does not deform or a wrinkle is not produced according to this invention, this design part is known vividly, without that design collapsing. If it does in this way, order can be distinguished at a glance, a diaper substitute will become pleasant and a wearer will also be pleased with anyone. It is sufficient to make the design design sheet which designed intervene between appearance sheets. Moreover, design printing can also be carried out at the appearance sheet 1.

[0050] (flexible member) As the above-mentioned flexible member, the thing of elastic elasticity, such as urethane besides the quality of the materials, such as natural rubber and synthetic rubber, can be used. Moreover, a thin band-like elastic elasticity band and the thing of the shape of a large sheet in area can also be used. There are a band, a film, or sheets, such as urethane, etc. as these examples. As a film, a mesh-like sheet etc. can be suitably chosen as a nonporous film, a hole aperture film, and a pan as a sheet. The example of arrangement of the nonporous film 60 was shown in drawing 8. Moreover, the example of arrangement of the mesh-like film 61 was shown in drawing 9. [ whether also in these gestalten, the difference of the product width of face of the configuration concerning this invention, i.e., the normal state which said flexible section has contracted, and the product width of face in the maximum expanding condition of having made the hoop direction elongating the flexible section to max is set to 100-250mm, and ] Or the time of shrinking said flexible section with a hoop direction by 100mm from the maximum expanding condition which max was made to elongate, It is important that the flexible force of the periphery section of a product at the time of the flexible force of the periphery section of a product being in the range of 300-600gf, and making it shrunken by 150mm makes it the range of

50-300gf.

[0051]

[Effect of the Invention] according to this invention the above passage -- a wrinkle -- ~~\*\*\*\*\*~~  
-- there are nothings and it becomes what was felt refreshed as appearance of a product, and moreover, it is easy to dispose, or is easy to vomit, and an advantage, such as excelling in fit nature, is brought about.

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[Translation done.]

**\* NOTICES \***

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] It is a top view from the expansion condition use side side of the gestalt of the 1st operation for vocabulary explanation of this invention.

[Drawing 2] It is a top view from the expansion condition use side side of the gestalt of the 1st operation.

[Drawing 3] It is the 5-5 line view Fig.

[Drawing 4] It is the perspective view of the gestalt product of the 1st operation.

[Drawing 5] It is the formation-of-wrinkles situation schematic diagram of this invention product.

[Drawing 6] It is the explanatory view of the arrangement gestalt of a flexible member.

[Drawing 7] It is drawing showing the example of a design of the front flesh side of a product.

[Drawing 8] It is a top view from the expansion condition use side side of the gestalt of the operation which prepared another flexible member.

[Drawing 9] It is a top view from the expansion condition use side side of the gestalt of the operation which prepared other flexible members.

[Description of Notations]

1 — appearance sheet and 4 — length from the crotch to the cuff, 10 — absorption subject, 12 — backseat, and 13 — an absorption core, Ab— absorber, C— barrier cuffs, and 20 — a waist flexible member, 21b, 21f— skid-base section flexible member, 23 — crotch flexible member, and T— the circumference section of a drum, u— skid-base section, l— crotch, and w— the waist section, wO— waist opening, and lo— leg opening.

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[Translation done.]

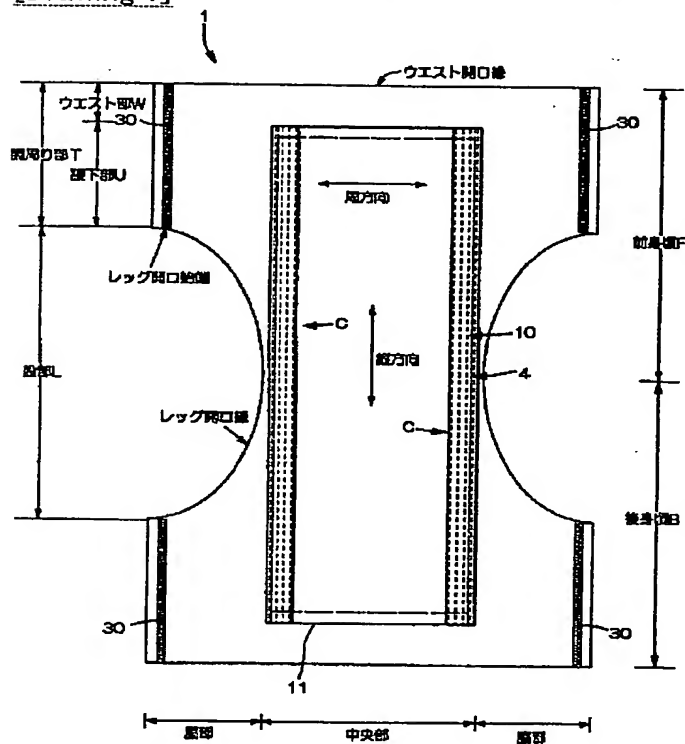
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## DRAWINGS

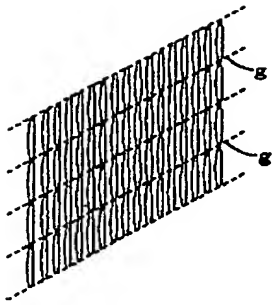
[Drawing 1]



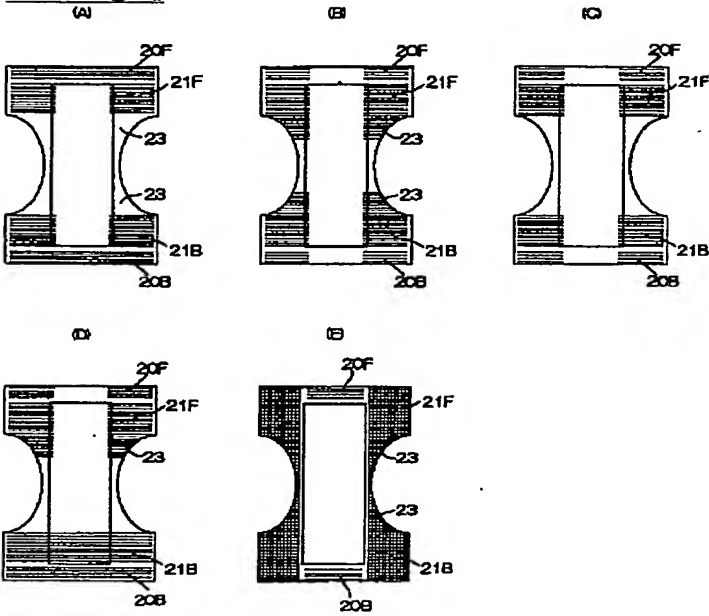
[Drawing 2]





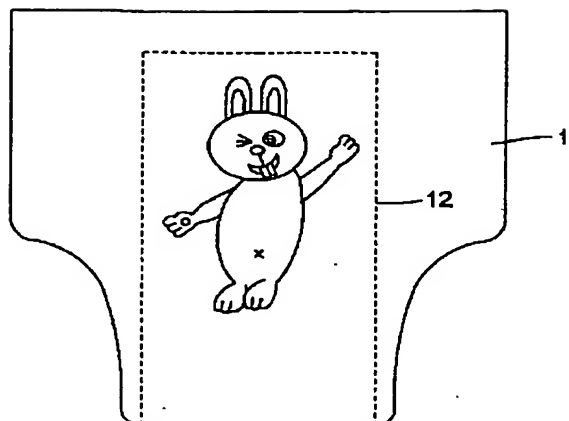


[Drawing 6]

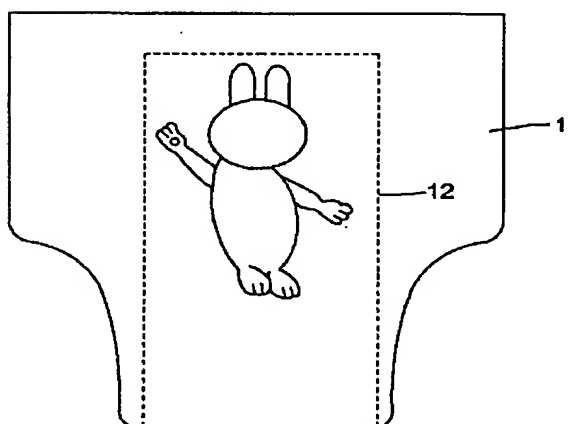


[Drawing 7]

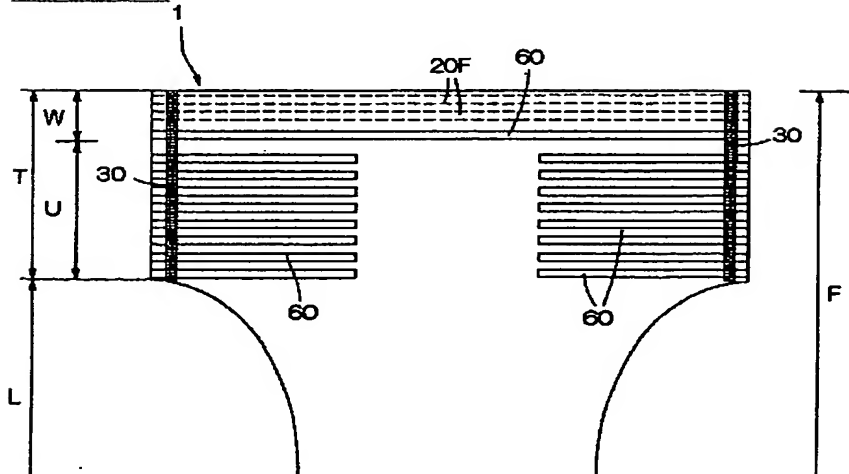
正面



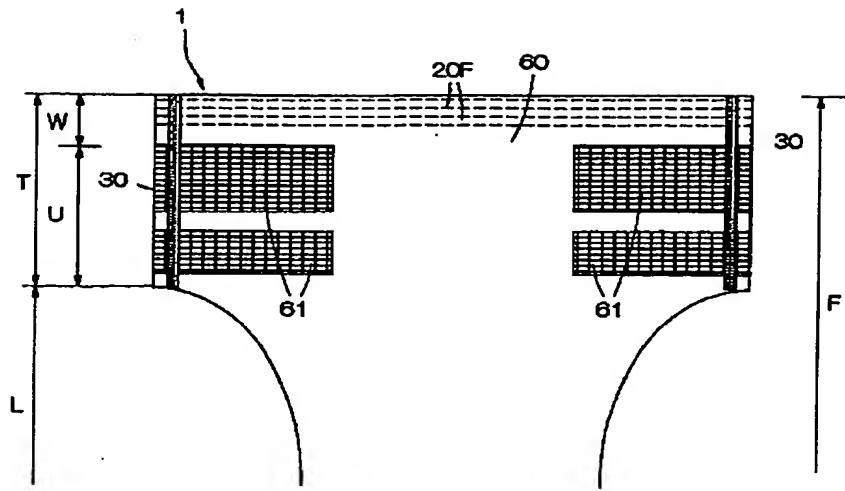
裏面



[Drawing 8]



[Drawing 9]



[Translation done.]